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EXAMINER	
DUONG, FRANK	
ART UNIT	**PAPER NUMBER**
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/026,860	NIELSEN ET AL.	
	Examiner	Art Unit	
	Frank Duong	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 October 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is a response to communications dated 10/13/06. Claims 1-46 are pending in the application.

Information Disclosure Statement

1. The information disclosure statement filed 08/25/06 complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609. It has been considered and placed in the application file.

Claim Objections

2. Claims 20, 28, 36, 40-41, 43 and 46 are objected to because of the following informalities:

As per claim 20, line 3, the term "cells should be transmitted" should be changed to --cells are transmitted-- to better limit the claim.

As per claim 28, line 3, the term "capable of holding" should be changed to --holding--. A typical reason for doing so is that the term "capable of" has a tendency to make the following claimed limitation either optional or indefinite.

As per claim 36, it appears to be an improper dependent claim because claim 36 is an apparatus claim and it depends from claim 28, a method claim. In accordance with the current claim language, claim 36 should depend from claim 32 instead.

As per claim 40, line 3, the term "capable of holding" should be changed to --holding--.

As per claim 41, line 5, the term "capable of holding" should be changed to --holding--.

As per claim 43, lines 2-3, the term "capable of holding" should be changed to --holding--.

As per claim 46, it appears to be an improper dependent claim because claim 46 is a method claim and it depends from claim 41, an apparatus claim. In accordance with the current claim language, the term "method claim of claim 41" should be changed to --apparatus claim of claim 41--.

It also appears that the Applicants have blatantly added claim 46 with a status identifier of "(Currently amended)". This claim was not originally presented or previous executed. It is unclear why the Applicants take such action.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Stacey et al (USP 6,654,376) (hereinafter "Stacey").

Regarding **claim 1**, in accordance with Stacey reference entirety, Stacey discloses a method for controlling the dispatch of data on a telecommunication Network (*Fig. 4 or 5 and col. 11, line 16 to col. 16, line 32 or col. 16, line 33 to col. 19, line 22*), the method comprising:

receiving one or more data streams at an interface on the telecommunication network (*Fig. 4; Received AAL2 CPS Packet*);

accumulating data from the one or more data streams for each of a plurality of outgoing channels (*Fig. 4; elements 45 and 30*);

upon the accumulation of a threshold amount of data for one of the outgoing channels, dispatching the accumulated data (*Fig. 4; 50 and Assembled CPS PDU of complete ATM SDU as discussed at col. 11, line 44 or Tmin timer expired and accumulated data reached 47 octets discussed at col. 12, lines 38-41*);

if there is no accumulated data for an outgoing channel then upon the receipt of data for that outgoing channel which is not dispatched immediately, scheduling an expiry time for the outgoing channel and associating (*47 and 48*) the outgoing channel with the expiry time (*Fig. 4 or 5; elements 47 and 48*) (*col. 12, lines 43-65*); and,

when the expiry time occurs, using the association (*47 and 48*) to identify a group of one or more outgoing channels associated with the expiry time and, for the outgoing channels in the group, sending the accumulated data (*col. 12, lines 43-65*).

Regarding **claim 2**, in accordance with Stacey reference entirety, Stacey discloses a method for controlling the dispatch of data on a telecommunication

Network (*Fig. 4 or 5 and col. 11, line 16 to col. 16, line 32 or col. 16, line 33 to col. 19, line 22*), the method comprising:

receiving one or more data streams at an interface on the telecommunication network (*Fig. 4; Received AAL2 CPS Packet*);

accumulating data from the one or more data streams for each of a plurality of outgoing channels (*Fig. 4; elements 45 and 30*);

upon the accumulation of a threshold amount of data for one of the outgoing channels, dispatching the accumulated data (*Fig. 4; 50 and Assembled CPS PDU of complete ATM SDU as discussed at col. 11, line 44 or Tmin timer expired and accumulated data reached 47 octets discussed at col. 12, lines 38-41*);

if there is no accumulated data for an outgoing channel then upon the receipt of data for that outgoing channel which is not dispatched immediately, scheduling an expiry time for the outgoing channel and associating (*47 and 48*) the outgoing channel with the expiry time (*Fig. 4 or 5; elements 47 and 48*) (*col. 12, lines 43-65*); and,

when the expiry time occurs, using the association (*47 and 48*) to identify a group of one or more outgoing channels associated with the expiry time and, for the outgoing channels in the group, sending the accumulated data (*col. 12, lines 43-65*) wherein associating the outgoing channel with the expiry time comprises placing information identifying the outgoing channel in a list associated with the expiry time (*Fig. 4 or 5; 47-48 and col. 14, lines 43-44*).

Regarding **claim 3**, in addition to features recited in base claim 2 (see rationales discussed above), Stacey further discloses wherein the list is a linked list and

associating the outgoing channel with the expiry time comprises placing a pointer to a record associated with the outgoing channel into the linked list (*see Fig. 4 or 5 and link list having Head, Tail and Pointer depicted thereat or col. 14, line 29*).

Regarding **claim 4**, in addition to features recited in base claim 2 (see rationales discussed above), Stacey further discloses upon dispatching the accumulated data for an outgoing channel before the expiry time, deleting from the list the association of the outgoing channel with the expiry time (*col. 16, lines 26-29*).

Regarding **claim 5**, in addition to features recited in base claim 4 (see rationales discussed above), Stacey further discloses wherein the list comprises a doubly-linked list and deleting from the list the association of the outgoing channel with the expiry time comprises retrieving information identifying a previous outgoing channel in the doubly linked list and a next outgoing channel in the doubly linked list from a record associated with the outgoing channel (*doubly linked list is discussed at col. 14, lines 43-59*).

Regarding **claim 6**, in addition to features recited in base claim 1 (see rationales discussed above), Stacey further discloses wherein dispatching the accumulated data comprises dispatching one or more fixed-size cells (*see Fig. 1 or fully assembled AAL2 CPS PDU is a fixed sized cell and it is discussed at col. 16, lines 14-32*).

Regarding **claim 7**, in addition to features recited in base claim 6 (see rationales discussed above), Stacey further discloses wherein the threshold amount of data is an amount of data required to fill one of the fixed-size cells *((Qhi+Qlo)>= 47) is discussed at col. 15, line 60*).

Regarding **claim 8**, in addition to features recited in base claim 7 (see rationales discussed above), Stacey further discloses wherein data for each outgoing channel is carried by a connection on an ATM telecommunication link and the fixed-size cells are ATM cells (*see Fig. 1 or col. 7, lines 9-12 and thereinafter*).

Regarding **claim 9**, in addition to features recited in base claim 7 (see rationales discussed above), Stacey further discloses wherein receiving a plurality of data streams at an interface comprises receiving data frames at the interface and accumulating data destined for each of the plurality of outgoing channels comprises encapsulating the data frames for an outgoing channel according to an ATM adaptation layer protocol (*AAL2*) (*Fig. 4 or 4; elements 45, 30 and 50 depicted this claimed limitations*).

Regarding **claim 10**, in addition to features recited in base claim 1 (see rationales discussed above), Stacey further discloses wherein dispatching the accumulated data comprises sending one or more variable-size packets (*col. 8, lines 7-13 and thereinafter*).

Regarding **claim 11**, in addition to features recited in base claim 10 (see rationales discussed above), Stacey further discloses wherein the threshold amount of data is less than a maximum amount of data capable of being carried by one of the variable-size packets *((Qhi+Qlo)>= 47) is discussed at col. 15, line 60. ATM cell has 48 octets. Thus, 47 is less than 48*).

Regarding **claim 12**, in addition to features recited in base claim 10 (see rationales discussed above), Stacey further discloses wherein the threshold amount of data is equal to a maximum amount of data capable of being carried by one of the

variable-size packets (Fig. 1 depicted AAL2 cell has a maximum amount 47 bytes and threshold of 47 is shown as *((Qhi+Qlo)>= 47) and discussed at col. 15, line 60)*.

Regarding **claim 13**, in accordance with Stacey reference entirety, Stacey discloses a method for controlling the dispatch of data on a telecommunication Network (*Fig. 4 or 5 and col. 11, line 16 to col. 16, line 32 or col. 16, line 33 to col. 19, line 22*), the method comprising:

receiving one or more data streams at an interface on the telecommunication network (*Fig. 4; Received AAL2 CPS Packet*);

accumulating data from the one or more data streams for each of a plurality of outgoing channels (*Fig. 4; elements 45 and 30*);

upon the accumulation of a threshold amount of data for one of the outgoing channels, dispatching the accumulated data (*Fig. 4; 50 and Assembled CPS PDU of complete ATM SDU as discussed at col. 11, line 44 or Tmin timer expired and accumulated data reached 47 octets discussed at col. 12, lines 38-41*);

providing a CU timer memory (47-48) comprising a plurality of locations, each of the locations corresponding to a possible expiry time (Fig. 4; elements 47-48);

if there is no accumulated data for an outgoing channel then upon the receipt of data for that outgoing channel which is not dispatched immediately, scheduling an expiry time for the outgoing channel and associating (*47 and 48*) the outgoing channel with the expiry time (*Fig. 4 or 5; elements 47 and 48*) (*col. 12, lines 43-65*) wherein associating the outgoing channel with the expiry time comprises associating a record associated with the outgoing channel with one of the locations in the CU timer memory

(47-48) corresponding to the expiry time for the outgoing channel (*see Fig. 4 or 5; details of Event Timer Ring Buffers and Event Store*);

when the expiry time occurs, using the association (*47 and 48*) to identify a group of one or more outgoing channels associated with the expiry time and, for the outgoing channels in the group, sending the accumulated data (*col. 12, lines 43-65*).

Regarding **claim 14**, in addition to features recited in base claim 13 (see rationales discussed above), Stacey further discloses wherein associating a record associated with the outgoing channel with one of the locations in the CU timer memory comprises placing a pointer to the record in the one of the locations in the CU timer memory (*see Fig. 4 or 5; details of Event Timer Ring Buffers and Event Store having Head, Tail and Pointer*).

Regarding **claim 15**, in accordance with Stacey reference entirety, Stacey discloses a method for controlling the dispatch of data on a telecommunication Network (*Fig. 4 or 5 and col. 11, line 16 to col. 16, line 32 or col. 16, line 33 to col. 19, line 22*), the method comprising:

receiving one or more data streams at an interface on the telecommunication network (*Fig. 4; Received AAL2 CPS Packet*);

accumulating data from the one or more data streams for each of a plurality of outgoing channels (*Fig. 4; elements 45 and 30*);

upon the accumulation of a threshold amount of data for one of the outgoing channels, dispatching the accumulated data (*Fig. 4; 50 and Assembled CPS PDU of*

complete ATM SDU as discussed at col. 11, line 44 or Tmin timer expired and accumulated data reached 47 octets discussed at col. 12, lines 38-41);

providing a CU timer memory (47-48) comprising a plurality of locations, each of the locations corresponding to a possible expiry time (Fig. 4; elements 47-48);

if there is no accumulated data for an outgoing channel then upon the receipt of data for that outgoing channel which is not dispatched immediately, scheduling an expiry time for the outgoing channel and associating (*47 and 48*) the outgoing channel with the expiry time (*Fig. 4 or 5; elements 47 and 48*) (*col. 12, lines 43-65*) wherein associating the outgoing channel with the expiry time comprises placing a pointer to a record associated with the outgoing channel into a linked list associated with one of the locations in the CU timer memory corresponding to the expiry time (*see Fig. 4 or 5; details of Event Timer Ring Buffers and Event Store having Head, Tail and Pointer*);

when the expiry time occurs, using the association (*47 and 48*) to identify a group of one or more outgoing channels associated with the expiry time and, for the outgoing channels in the group, sending the accumulated data (*col. 12, lines 43-65*).

Regarding **claim 16**, in addition to features recited in base claim 15 (see rationales discussed above), Stacey further discloses wherein using the association to identify a group of one or more outgoing channels associated with the expiry time comprises traversing a linked list beginning at the location in the CU timer memory corresponding to the expiry time (*col. 14, lines 43-64*).

Regarding **claim 17**, in accordance with Stacey reference entirety, Stacey discloses a method for controlling the transmission of fixed-sized data cells (ATM cells) on a telecommunication link (*Fig. 4 or 5*), the method comprising:

receiving one or more data streams at an interface to the telecommunication link (*Fig. 4; Receiving AAL2 CPS Packets*);

assigning data from the data streams into fixed-size cells for transmission across connections in the telecommunication link (*Fig. 4; Packet Assembly Process 50*);

upon the creation of a partially-filled cell to be transmitted on a connection, scheduling an expiry time for the partially-filled cell (*cell required padding*) and associating the connection with the expiry time (*Fig. 4; Packet Scheduler Process 44,Timer Expiry Process 49, Event Timer Ring Buffer 48 and Event Store 47 and col. 13, lines 8-16 and thereinafter*) (*note: as for partially-filled packet scheduling, Stacey discloses if holdover timer expires before a common part sublayer payload data unit is complete, the payload of that data unit is padded and dispatched*); and,

when the expiry time occurs, using the association to identify a group of one or more connections for which there are partially-filled cells all associated with the expiry time and dispatching the partially-filled cells in the group (*col. 12, lines 43-65*).

Regarding **claim 18**, in accordance with Stacey reference entirety, Stacey discloses a method for controlling the transmission of fixed-sized data cells (ATM cells) on a telecommunication link (Fig. 4 or 5), the method comprising:

receiving one or more data streams at an interface to the telecommunication link (*Fig. 4; Receiving AAL2 CPS Packets*);

assigning data from the data streams into fixed-size cells for transmission across connections in the telecommunication link (*Fig. 4; Packet Assembly Process 50*);

upon the creation of a partially-filled cell to be transmitted on a connection, scheduling an expiry time for the partially-filled cell (*cell required padding*) and associating the connection with the expiry time (*Fig. 4; Packet Scheduler Process 44,Timer Expiry Process 49, Event Timer Ring Buffer 48 and Event Store 47 and col. 13, lines 8-16 and thereinafter*) (*note: as for partially-filled packet scheduling, Stacey discloses if holdover timer expires before a common part sublayer payload data unit is complete, the payload of that data unit is padded and dispatched (col. 9, lines 30-34 and thereinafter*); and, when the expiry time occurs, using the association to identify a group of one or more connections for which there are partially-filled cells all associated with the expiry time and dispatching the partially-filled cells in the group (*col. 12, lines 43-65*) wherein associating the connection with the expiry time comprises placing information identifying the connection in a list associated with the expiry time (*see Fig. 4 for details of elements 47-48*).

Regarding **claim 19**, in addition to features recited in base claim 18 (see rationales discussed above), Stacey further discloses wherein the list is a linked list and associating the connection with the expiry time comprises placing a pointer to a record associated with the connection into the linked list (*see Fig. 4 for details of elements 47-48 having Head, Tail and Pointer or description at col. 14, line 12-64*).

Regarding **claim 20**, in addition to features recited in base claim 17 (see rationales discussed above), Stacey further discloses wherein sending the partially-filled

cells comprises providing an indication that the identified partially-filled cells are transmitted without further delay (*this limitation is inherent in sending partially-filled cells*).

Regarding **claim 21**, in addition to features recited in base claim 17 (see rationales discussed above), Stacey further discloses upon filling a partially-filled cell before the expiry time, dispatching the cell and deleting the association of the connection with the expiry time (*col. 16, lines 26-29*).

Regarding **claim 22**, in accordance with Stacey reference entirety, Stacey discloses method for controlling the transmission of fixed-sized data cells (ATM cells) on a telecommunication link (Fig. 4 or 5), the method comprising:

receiving one or more data streams at an interface to the telecommunication link (*Fig. 4; Receiving AAL2 CPS Packets*);

assigning data from the data streams into fixed-size cells for transmission across connections in the telecommunication link (*Fig. 4; Packet Assembly Process 50*);

upon the creation of a partially-filled cell to be transmitted on a connection, scheduling an expiry time for the partially-filled cell (*cell required padding*) and associating the connection with the expiry time (*Fig. 4; Packet Scheduler Process 44,Timer Expiry Process 49, Event Timer Ring Buffer 48 and Event Store 47 and col. 13, lines 8-16 and thereinafter*) (*note: as for partially-filled packet scheduling, Stacey discloses if holdover timer expires before a common part sublayer payload data unit is complete, the payload of that data unit is padded and dispatched*);

upon filling a partially-filled cell before the expiry time, dispatching the cell and deleting the association of the connection with the expiry time (*col. 16, lines 26-29*); and

when the expiry time occurs, using the association to identify a group of one or more connections for which there are partially-filled cells all associated with the expiry time and dispatching the partially-filled cells in the group (*col. 12, lines 43-65*);

wherein associating the connection with the expiry time comprises inserting a record identifying the connection into a doubly linked list associated with the expiry time and deleting the association of the connection with the expiry time comprises removing the record from the doubly linked list (*Fig. 4; elements 47-48 and col. 14, lines 43-64*).

Regarding **claim 23**, in addition to features recited in base claim 17 (see rationales discussed above), Stacey further discloses wherein the telecommunication link comprises an ATM link and the fixed-size cells comprise ATM cells (*Fig. 4 or 5 and col. 7, lines 9-12*).

Regarding **claim 24**, in accordance with Stacey reference entirety, Stacey discloses a method for controlling the transmission of fixed-sized data cells (ATM cells) on a telecommunication link (Fig. 4 or 5), the method comprising:

receiving one or more data streams at an interface to the telecommunication link (*Fig. 4; Receiving AAL2 CPS Packets*);

assigning data from the data streams into fixed-size cells for transmission across connections in the telecommunication link (*Fig. 4; Packet Assembly Process 50*);

upon the creation of a partially-filled cell to be transmitted on a connection, scheduling an expiry time for the partially-filled cell (*cell required padding*) and

associating the connection with the expiry time (*Fig. 4; Packet Scheduler Process 44,Timer Expiry Process 49, Event Timer Ring Buffer 48 and Event Store 47 and col. 13, lines 8-16 and thereinafter*) (*note: as for partially-filled packet scheduling, Stacey discloses if holdover timer expires before a common part sublayer payload data unit is complete, the payload of that data unit is padded and dispatched (col. 9, lines 30-34 and thereinafter*);

when the expiry time occurs, using the association to identify a group of one or more connections for which there are partially-filled cells all associated with the expiry time and dispatching the partially-filled cells in the group (*col. 12, lines 43-65*) ; and

providing in a CU timer memory (47-48) areas corresponding to each of a plurality of possible expiry times and wherein placing information identifying the connection into an area in the CU timer memory corresponding to the expiry time (*see Fig. 4 for details of elements 47-48*).

Regarding **claim 25**, in addition to features recited in base claim 24 (see rationales discussed above), Stacey further discloses wherein placing information identifying the connection into an area in the CU timer memory comprises placing a pointer to a head of a list of one or more records, including a record associated with the connection, into the area in the CU timer memory corresponding to the expiry time (*see Fig. 4 or 5 for details elements 47-48 having head, tail and pointer stored in timer ring buffers and event store as disclosed at col. 14, lines 43-64 and thereinafter*).

Regarding **claim 26**, in addition to features recited in base claim 24 (*see rationales discussed above), Stacey further discloses wherein the list comprises a linked list (see Fig. 4 or 5; elements 47-48 or col.14, lines 43-64 and thereinafter*).

Regarding **claim 27**, in addition to features recited in base claim 24 (*see rationales discussed above), Stacey further discloses* wherein using the association to identify a group of one or more connections having partially-filled cells all associated with the expiry time comprises traversing a linked list beginning at the location in the CU timer memory corresponding to the expiry time (*see col. 14, lines 43-64 and thereinafter*).

Regarding **claim 28**, in addition to features recited in base claim 17 (*see rationales discussed above), Stacey further discloses* maintaining a record for each of the plurality of connections wherein the record comprises a field holding a pointer to a next one of the records and traversing the linked list comprises retrieving from the location in the CU timer memory a pointer to a first record associated with a first connection and retrieving from the field of the first record a pointer to a second record associated with a second connection having the same expiry time (*Fig. 4 or 5; elements 47-48 and col. 14, lines 43-64 and thereinafter*).

Regarding **claim 29**, in accordance with Stacey reference entirety, Stacey discloses a method for controlling the transmission of fixed-sized data cells (ATM cells) on a telecommunication link (*Fig. 4 or 5*), the method comprising:

receiving one or more data streams at an interface to the telecommunication link (*Fig. 4; Receiving AAL2 CPS Packets*);

assigning data from the data streams into fixed-size cells for transmission across connections in the telecommunication link (*Fig. 4; Packet Assembly Process 50*);

upon the creation of a partially-filled cell to be transmitted on a connection, scheduling an expiry time for the partially-filled cell (*cell required padding*) and associating the connection with the expiry time (*Fig. 4; Packet Scheduler Process 44,Timer Expiry Process 49, Event Timer Ring Buffer 48 and Event Store 47 and col. 13, lines 8-16 and thereinafter*) (*note: as for partially-filled packet scheduling, Stacey discloses if holdover timer expires before a common part sublayer payload data unit is complete, the payload of that data unit is padded and dispatched*); and,

when the expiry time occurs, using the association to identify a group of one or more connections for which there are partially-filled cells all associated with the expiry time and dispatching the partially-filled cells in the group (*col. 12, lines 43-65*); and

maintaining a CU timer memory having a location associated with each of a plurality of possible expiry times wherein associating the connection with the expiry time comprises placing information identifying the connection into a list associated with the location in the CU timer memory corresponding to the expiry time (*Fig. 4 or 5; elements 47-48 and col. 14, lines 43-64 and thereinafter*).

Regarding **claim 30**, in addition to features recited in base claim 29 (see rationales discussed above), Stacey also discloses wherein the list comprises a linked list (*Fig. 4-5 and elements 47-48 or col. 14, lines 51-52*).

Regarding **claim 31**, in addition to features recited in base claim 30 (see rationales discussed above), Stacey also discloses wherein the linked list comprises a doubly-linked list (*Fig. 4-5 and elements 47-48 or col. 14, lines 51-52*).

Regarding **claim 32**, in accordance with Stacey reference entirety, Stacey shows an apparatus for forwarding data packets belonging to a plurality of outgoing channels, each outgoing channel carrying data from one or more streams of data, over a telecommunication link (*see Fig. 4 or 5 for the preamble environment*) the apparatus comprising:

a outgoing packet assembler (*elements 45, 30 and 50*) connected to place data packets onto the telecommunications link (*depicted as Assembled CPS PDU in Fig. 4 or 5*) and a combined use timer (*elements 49, 48 and 47*) connected to control the transmission of partially-filled data packets over the telecommunications link (*partially-filled data packets are programmed using the Holdover Timer as discussed above*), the outgoing packet assembler being configured to provide a partial packet ready signal (*depicted as VCID, Set Holdover in Fig. 4 or 5*) to the combined use timer upon the creation of a partially-filled data packet containing less than a threshold amount of data (*see Fig. 4 or 5 for connection details and col. 11, line 21 to col. 14, line 42*);

the combined use timer (*46, 48 and 47*) comprising a timer maintaining a current time value (*depicted as Current Time in Fig. 4 or 5*), a calculator (49) connected to determine an expiry time for a partially-filled packet corresponding to a partial packet ready signal, a data structure capable of holding information identifying groups of partially-filled packets which share a common expiry time and comparison logic (*Fig. 4*

or 5; elements 41 and 44) connected to signal to the outgoing packet assembler when the expiry time for a group of one or more partially-filled packets which share a common expiry time has occurred (*see Fig. 4 or 5 for connection details and col. 14, lines 43-64*).

Regarding **claim 33**, in addition to features recited in base claim 32 (see rationales discussed above), Stacey also discloses wherein the data packets comprise fixed-size cells (ATM cells) (*col. 7, lines 9-12*).

Regarding **claim 34**, in addition to features recited in base claim 33 (see rationales discussed above), Stacey also discloses wherein the threshold amount of data is an amount of data equal to a data payload of one of the fixed-size cells (47 bytes) (*col. 15, line 60 and thereinafter*).

Regarding **claim 35**, in addition to features recited in base claim 32 (see rationales discussed above), Stacey also discloses wherein the outgoing packet assembler is connected to provide a packet sent signal when a previously created partially-filled packet is transmitted (*depicted as VC ID, Set Holdover in Fig. 4 or 5*) and the combined use timer comprises means for removing reference to the previously created partially-filled packet from the data structure in response to the packet sent signal (*col. 13, line 8 to col. 14, line 64*).

Regarding **claim 36**, in addition to features recited in base claim 32 (see rationales discussed above), Stacey also discloses wherein the outgoing packet assembler is connected to provide a packet sent signal when a previously created partially-filled packet is transmitted (*depicted as VC ID, Set Holdover in Fig. 4 or 5*) and the combined use timer comprises means for inhibiting (41) the comparison logic (44

and 41) from generating a signal relating to packets for which packet sent signals have been received (VC ID) (*col. 13, line 8 to col. 14, line 64*).

Regarding **claim 37**, in accordance with Stacey reference entirety, Stacey shows an apparatus for forwarding data packets belonging to a plurality of outgoing channels, each outgoing channel carrying data from one or more streams of data, over a telecommunication link (*see Fig. 4 or 5 for the preamble environment*) the apparatus comprising:

a outgoing packet assembler (*elements 45, 30 and 50*) connected to place data packets onto the telecommunications link (*depicted as Assembled CPS PDU in Fig. 4 or 5*) and a combined use timer (*elements 49, 48 and 47*) connected to control the transmission of partially-filled data packets over the telecommunications link (*partially-filled data packets are programmed using the Holdover Timer as discussed above*), the outgoing packet assembler being configured to provide a partial packet ready signal (*depicted as VCID, Set Holdover in Fig. 4 or 5*) to the combined use timer upon the creation of a partially-filled data packet containing less than a threshold amount of data (*see Fig. 4 or 5 for connection details and col. 11, line 21 to col. 14, line 42*);

the combined use timer (*46, 48 and 47*) comprising a timer maintaining a current time value (*depicted as Current Time in Fig. 4 or 5*), a calculator (49) connected to determine an expiry time for a partially-filled packet corresponding to a partial packet ready signal, a data structure capable of holding information identifying groups of partially-filled packets which share a common expiry time and comparison logic (*Fig. 4 or 5; elements 41 and 44*) connected to signal to the outgoing packet assembler when

the expiry time for a group of one or more partially-filled packets which share a common expiry time has occurred (*see Fig. 4 or 5 for connection details and col. 14, lines 43-64*); wherein the data structure comprises a plurality of lists (*lists are depicted in elements 47 and 48*), one of the lists corresponding to each of a plurality of possible expiry times (*see Fig. 4 or 5 for details of elements 47-48*).

Regarding **claim 38**, in addition to features recited in base claim 37 (see rationales discussed above), Stacey also discloses wherein the lists comprises linked lists (*col. 14,lines 51-52*).

Regarding **claim 39**, in addition to features recited in base claim 38 (see rationales discussed above), Stacey also discloses wherein the linked lists comprise doubly linked lists (*col. 14,lines 51-52*).

Regarding **claim 40**, in addition to features recited in base claim 39 (see rationales discussed above), Stacey also discloses an interface system comprising control logic (41), a memory (47 and 48) holding a plurality of records (see Fig. 4 or 5 for details), the records containing information regarding states of each of the plurality outgoing channels and a working memory (42 or 43) wherein the control logic is configured to load into the working memory a current one of the records (*see Fig. 4 or 5 and col. 13, line 42 to col. 14, line 11 and thereinafter*).

Regarding **claim 41**, in addition to features recited in base claim 40 (see rationales discussed above), Stacey also discloses wherein each of the records comprises a previous connection in list field capable of holding a pointer identifying a previous record in one of the doubly-linked lists and a next connection in list field

holding a pointer identifying a next record in the doubly linked list, each of the doubly linked lists comprises a set of zero or more records, and the records in any of the sets comprising two or more of the records are linked by pointers in their next connection in list and previous connection in list fields (*col. 13, line 8 to col. 14, line 64*).

Regarding **claim 42**, in accordance with Stacey reference entirety, Stacey shows an apparatus for forwarding data packets belonging to a plurality of outgoing channels, each outgoing channel carrying data from one or more streams of data, over a telecommunication link (*see Fig. 4 or 5 for the preamble environment*) the apparatus comprising:

a outgoing packet assembler (*elements 45, 30 and 50*) connected to place data packets onto the telecommunications link (*depicted as Assembled CPS PDU in Fig. 4 or 5*) and a combined use timer (*elements 49, 48 and 47*) connected to control the transmission of partially-filled data packets over the telecommunications link (*partially-filled data packets are programmed using the Holdover Timer as discussed above*), the outgoing packet assembler being configured to provide a partial packet ready signal (*depicted as VCID, Set Holdover in Fig. 4 or 5*) to the combined use timer upon the creation of a partially-filled data packet containing less than a threshold amount of data (*see Fig. 4 or 5 for connection details and col. 11, line 21 to col. 14, line 42*);

the combined use timer (*46, 48 and 47*) comprising a timer maintaining a current time value (*depicted as Current Time in Fig. 4 or 5*), a calculator (49) connected to determine an expiry time for a partially-filled packet corresponding to a partial packet ready signal, a data structure capable of holding information identifying groups of

partially-filled packets which share a common expiry time and comparison logic (*Fig. 4 or 5; elements 41 and 44*) connected to signal to the outgoing packet assembler when the expiry time for a group of one or more partially-filled packets which share a common expiry time has occurred (*see Fig. 4 or 5 for connection details and col. 14, lines 43-64*); and

a CU timer memory (47 and 48) comprising a plurality of locations, each of the locations corresponding to a possible expiry time, each of the locations associated with a set of zero or more of the outgoing channels which have partially filled packets having expiry times matching the possible expiry time of the location (col. 14, lines 43-64).

Regarding **claim 43**, in addition to features recited in base claim 42 (see rationales discussed above), Stacey also discloses wherein each of the locations in the CU timer memory (47 and 48) is holding a pointer identifying a record corresponding to a outgoing channel in a set of the outgoing channels which have partially filled packets having expiry times matching the possible expiry time of the location (col. 14, lines 43-64).

Regarding **claim 44**, in addition to features recited in base claim 32 (see rationales discussed above), Stacey also discloses wherein the threshold is smaller than a maximum data payload of one of the data packets (*col. 15, line 60*).

Regarding **claim 45**, in addition to features recited in base claim 32 (see rationales discussed above), Stacey also discloses wherein the threshold is equal to a maximum data payload of one of the data packets (*col. 15, line 60*).

Regarding **claim 46**, in addition to features recited in base claim 41 (see rationales discussed above), Stacey also discloses means for encapsulating received data according to an ATM adaptation layer protocol prior to placing the received data into the fixed-sized data packets (*not shown in Fig. 4 or 5. It is inherent there is means for encapsulation as disclosed at col. 7, lines 9-28*).

Response to Arguments

4. Applicant's arguments with respect to claims 1-46 have been considered but are moot in view of the new ground(s) of rejection. The search report submitted in the form of Information Disclosure Statement dated 08/25/06 and the newly found references in updating the search has render the claimed invention not patentable as discussed above.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

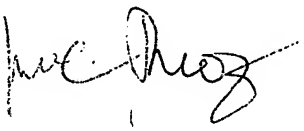
Zifroni et al (USP 6,603,766).

Subbiah et al (USP 6,449,276).

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Duong whose telephone number is 571-272-3164. The examiner can normally be reached on 7:00AM-3:30PM, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn D. Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



FRANK DUONG
PRIMARY EXAMINER

December 22, 2006